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mesotrochal larva; possibly it may be compared to a *telotrochal* larva, but it must be shown that the bands arise in a similar way in each. This is only a tentative suggestion.

In Tornaria the arrangement of two longitudinal ciliated bands agrees throughout with the Asterid larva, as does also its internal development (cœlom sacks). Still, on account of the differences in the mature animals, it is difficult to show more than a very distant genetic relationship.

As a result of these observations, we believe that the Dipleurula larva, including Tornaria, are separated from the cilia-bearing larvæ of the higher and lower worms, as well as molluscs. An homologizing of the circumoral ciliated bands of Echinoderms with the cilia apparatus of the other larval types cannot be carried out. They probably are structures independently arising. The results on the nervous system of Asterid and Echinid larva were negative.

The author speaks of a bilateral fibre-system, united by a cross commissure, lying in the dorsal skin under the epithelium. It seems to take the place of a nervous system, and its structure recalls that of nervous tissue. The thicker fibres cannot be distinguished from the muscle fibres of the foregut, perhaps a little less transparent and certainly more branched. This may be regarded as a well-developed dermal musculature.—GEORGE W. FIELD.

PSYCHOLOGY.

Note on Imperfect Instinct in Animals.—On a number of occasions I have observed that the instinct of animals is sometimes shown to be imperfect, and reading Mr. George J. Romanes's book on "Mental Evolution in Animals," where mention is made of "imperfection of instinct" (page 167), his illustrations quoted recall to my mind some original observations which might add still further to the interest of this subject. Regarding insects, on July 4th, 1887, I noticed among the fireworks displayed upon an open stand, on the corner of a vacant lot in Chicago, a number of bunches of different-sized fire-crackers with their bright crimson covers conspicuously distributed among the other pieces of similar explosives. While I was standing close by a pretty, bright, reddish-brown butterfly, with silver spots on the under surface of the wings, which I supposed to be the larger species of Argynnis, came flying along near the ground from the north. When nearly opposite, attracted by the bright color, it changed its course quickly and flew directly to the fire-crackers, trying one bunch and then another, as I have noticed the same species of butterfly do in a field at Hyde Park while feeding, going from one bright red flower to another. Then suddenly recovering itself, and as if coming to a point of realization of a mistake, the insect continued its headlong journey southward until lost to view. I find in my diary on June 24th, 1884, while I was standing on a street corner in Chicago waiting the arrival of a car, an Alypian moth (*Alypia octomaculata*) was attracted by the clothes which I wore at that time. The specimen was a beautiful male, and when I stood still it flew about my body in the air repeatedly, and persistently alighted on my clothes, although it was gently brushed away several times with my hand. The black and white on the moth coincided closely with the small checks of the same in my suit, the significance of which impressed me strongly at the time. Last summer (1890) I noticed several times that small white butterflies were attracted by bits of white pieces of paper which had been carelessly thrown upon the ground. An instance bearing upon this point is recorded in the AMERICAN NATURALIST (Vol. XX., page 976), in which many Ajax butterflies (*Papilio ajax*), which are wary and ordinarily captured with great difficulty, became attracted by dead specimens of the same species which I pinned upon the ends of twigs and stuck in the ground to serve as decoys. I was allowed to increase my collection with a number of additional specimens in this way by the use of a net, which could not have been otherwise taken.

In the matter of birds, it is an every-day experience of hunters to attract wild ducks and some other birds within gun-range by artificial decoys placed at a point where the birds can see them in passing over on the wing, and I have myself shot American golden plover frequently which were attracted by flat tin pieces which I had painted in imitation and cut in the shape of these birds, and stuck upon sticks which elevated them from the ground. In the latter case almost every individual in a flock of twenty to thirty have been shot in this way; and imitating their call-note would again and again call them back, although each time a number shot from the flock would fall to the ground, which were probably noticed by the birds that escaped the fire, for they sometimes dove down from above in the direction of the falling birds. It is interesting, although digressing a little from the subject in hand, to note that in localities where these birds frequented by thousands in their migrations some years ago, but few are seen now, and are fast following in the path of the Carolina paroquet and wild pigeon, owing in a great measure to their inability to adapt their imperfect and limited instinct to the sudden encroachment of civilized man. I once attended a great fire which consumed a number of large warehouses and a great quantity of lumber. The fire occurred in the dead of the night, lighting up the surrounding vicinity brightly, and the heat was intense. While thus gazing at this spectacle I noticed dozens of tame doves and English sparrows, irresistibly drawn by the intense light, fly directly into the flames, and hundreds were consumed in less time than it takes to relate the observation. Similarly, on July 7th, 1890, I noticed in front of my office, where an electric light hung to light up the corner at night, numerous insects, some of the most grotesque forms of moths, among them such as I had never observed before, and a number of different species of beetles heedlessly plunging into the globe that surrounds the light, and were destroyed. Mr. Romanes says (page 174) that under the general heading of "Imperfection of Instinct" "we may include two very distinct classes of phenomena; for instincts may be imperfect because they have not yet been completely developed, or they may appear to be imperfect because not completely answering to some change in those circumstances of life with reference to which they have been fully developed." To which of the two phenomena the above notes will belong requires but little reflection on the part of the reader.—DR. JOSEPH L. HANCOCK.

An Instance of the Black Snake Attacking Man.—In the autumn of 1867 I was residing at Stamford, Conn., being at that time about seventeen years of age. Apart from my college studies, my entire time was given over to the subject of biology and the formation of collections of various animals. The country about Stamford was admirable ground for the collecting naturalist, and by the writer its advantages were not neglected. One day, during the time above mentioned, I was hunting in a piece of heavy hemlock timber about three miles from the town, and upon passing under a tall tree my attention was attracted by a swinging, rope-like object that hung suspended from its lower limb, immediately overhead. In an instant I recognized it as a large black snake (*B. constrictor*), and he was holding on by a coil or two of his tail, while his head was several feet above the reach of my outstretched arm and hand. His body was straightened out as straight as could be. It took but an instant for me to appreciate this extraordinary behavior on the part of a species of snake with which I was quite familiar. I was about to reach up and strike him with my gun-barrels, when in a twinkling he let go his hold, and in falling fell all in a loose coil on my head and shoulder, but as quick as a flash twined himself about my neck, with the hinder third of his body twisted about my arm at the arm-pit. Rearing his head within a few inches of my face, and rapidly quivering his tongue at me, he was quite a picture to behold. It required but a moment or two, however, for me to demonstrate to this hardy and soot-tinted representative of the reptilian race that he had attacked a quarry entirely too big for his powers,—though I confess he warped down his constricting coils in a manner not to be despised as coming from so small a snake. Seizing him near the head, and leaning my gun against a tree, by three or four vigorous pulls I soon disengaged him, and his disappointed snakeship was taken home alive. He measured something less than six feet.—R. W. SHUFELDT, *Takoma, D. C., February 24th, 1891.*

ARCHEOLOGY AND ETHNOLOGY.[1]

International Congress of Anthropology and Prehistoric Archeology.—*Tenth Session, Paris, August 19 to 27, 1889.*—This congress grew out of the meeting at Spezzia, in Italy, in September, 1865, of four gentlemen of high reputation in connection with studies relative to prehistoric anthropology: Capellini, of Bologna; Gabriel de Mortillet, of Paris; Steenstrup, of Copenhagen; and Stoppani, of Italy. To further the organization, a meeting was agreed upon to be held at Neuchatel, in Switzerland, in the year following, 1866, and the organization was completed and the congress established at the meeting in Paris in 1867. The subsequent meetings were as follows: 1868, London and Norwich; 1869, Copenhagen; 1871, Bologna; 1872, Brussels; 1874, Stockholm; 1876, Budapest; 1878, Paris; 1880, Lisbon. Subsequent meetings were arranged for Rome and Athens, but were defeated by rumors of pestilence and war. The tenth session was organized to be held at Paris in the year 1889, thereby taking advantage of the French exposition and the many opportunities for study afforded, as well as the number of foreigners who would be in attendance.

The meetings were well attended, and brought together the most illustrious scientists of various nations. The influence of the congress was highly beneficial, and it deserved support. Not only did distant anthropologists and prehistoric archæologists become acquainted with

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[1] Edited by Dr. Thomas Wilson, Smithsonian Institution, Washington, D. C.